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**Hospital Quality of Care and Patient Satisfaction as a Function of
Physician Membership on Boards of Directors**

Senior Honors Thesis of:

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ABSTRACT

This archival study tested the positive relationship between physician membership on hospital Boards of Directors (BOD) and indices of hospital quality of care and performance sometimes found in earlier research. Archival data and interviews with N=90 participating hospitals in Tennessee (from a statewide total of 103 qualifying hospitals, response rate = 87%), included hospitals' reports of quality care and patients' perception of care from the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey. Results showed a significant, positive correlation between the number of physician members of Boards of Directors and the percentages of patients who report they would highly recommend the hospital. No correlation was present between physician membership and hospitals' reported process of care measures. These results reinforce earlier research and raise questions for future studies of hospitals' customer satisfaction and quality of care.

With increased national attention being placed on the healthcare system in America, the efficiency and success of United States hospitals is of primary importance, both to hospital executives as well as the patient-consumers. Since 2000, Hospitals have seen a mean annual increase in revenue of 6.9 percent. In 2008, the estimated revenue for Hospitals in the United States totaled over \$721 Billion, accounting for approximately ten percent of the national revenue for service industries. (U.S. Department of Commerce, 2008). As one of the largest service industries in the nation, the quality and perception of that service must constantly be evaluated and improved. Direct hospital healthcare is typically the role of Physicians and nurses; however, a primary guiding force of the quality and perception of care extends beyond the unit floors and is often the result of hospital administrators, most notably the governing Board of Directors.

Hospital Boards of Directors

As the governing body of the hospital, authority by Boards of Directors must be examined to maximize efficiency and success. However, the role of healthcare Boards of Directors has not always been a governing one. Historically, Boards were limited to a linkage between the hospital and community, thus explaining its traditional composition of community business leaders such as attorneys, bank officers, and other community activists (Molinari, Alexander, Morlock, & Lyles, 1995). Members were not held responsible for the management of the hospital; rather, they were relied upon to acquire resources for the hospital from the community. Such a tradition was held until the mid 1960s when a series of court decisions including *Darling v. Charleston Community Memorial Hospital* (1965) and *Sibley Memorial Hospital v. Wilson* (1973) held Boards of Directors liable for the management and governance of

the hospital. These court decisions created a shift in overall purpose and direction of the Boards of Directors. Prior to these judicial decisions, community linkage was the primary concern in selection of Board members. Hospital Boards were often viewed as a rubber-stamp organization in the past, but that is no longer the case. Currently, Boards are the ultimate authority for decisions and action of the hospital and have the potential to decide whether the hospital will acquire additional facilities or declare bankruptcy (Alexander, Weiner, & Bogue, 2001). However, the impact of these decisions shifted the board's charge to include more active and operational decision-making in addition to mere resource acquisition and community involvement (Alexander and Zuckerman 1989). With the change in responsibility, hospital Boards of Directors saw a dramatic increase in the proportion of insider participation (i.e. physicians) on boards compared to outsiders (i.e. community figures). However, although more legal responsibility and accountability has been entrusted to board members, many board members are uncertain of their role specifications or fill a position with an ambiguous role (Wright and Millesen, 2008). Despite legal accountability, Board duties and responsibilities cover a wide variety of duties and responsibilities. Pfeffer (1973) reported that Board member selection is a product of the organization's environment and dependence on community funds for its operation. Hospitals that depend on resources from the public often maintain the traditional community linkage-based model whereas hospitals (such as university or governmental affiliated institutions) adopt an administrative approach (Pfeffer 1973).

Although there is moderate variation in the breadth and focus of the board, it is clear that boards are, at a minimum, charged with maintaining and improving the quality of care and hospital oversight. Board members have a fiduciary responsibility and expectation to not only ensure the financial needs of the institution but are charged with the duty to maintain the quality

customer service, manifested through patient care. Regardless of the type of hospital (University; private, not-for-profit; private, for-profit; or public/governmental) the mission of the boards retain an emphasis on oversight of care:

“The Board... is responsible for providing oversight to the hospital, advice and support in facilitating the establishment of policies, maintaining quality patient care, and providing for institutional management and planning, all in a manner that is responsive to the needs of the community.”

-Summit Medical Center: Hermitage, TN

*Private, For-Profit Hospital owned by Hospital Corporation of America
(Summit Medical Center, 2009)*

“St. Mary’s board members’... vision, plans and decisions direct patient care as well as our resources and community giving. They are leaders in their businesses, in their churches and in the community. They honor St. Mary’s and its mission in the way they give their time and expertise to guide and grow this health system.”

-Mercy Health Partners: Knoxville, TN

*Private, Not-for-Profit, Religiously Operated Hospital
(Mercy Health Partners, 2010)*

“The University of Tennessee Medical Center... [Board of Directors] believes in the medical center’s mission, vision and values and stays informed about general operations and the healthcare needs of the community. Thanks to their contributions, talent and expertise, the medical center has been able to become a leader in healthcare for the region.”

-University of Tennessee Medical Center: Knoxville, TN

Public University-Operated

(University of Tennessee Medical Center, 2010)

Once the mission and focus of the Board is established, it is vital to assemble individuals that have the capacity to carry out its purpose. Board variation between organizations often includes variables in size, profession of members, scope of control, CEO involvement, and diversity (Goodstein, Gautam, and Boeker, 1994). Diversity, in particular, is of interest to researchers and this study. With many hospitals focused on the acquisition of resources and expertise, diversity has been linked to an increased ability to acquire outside sources of these contributions (Useem, 1984). However, higher levels of diversity are problematic when looking

at the Board's ability to enact change. Highly diverse Boards are impaired in their ability to enact strategic decisions because of a lack of cohesiveness and an increase in conflict (Roche, 2009). Likewise, boards with large membership are less cohesive, and thus group conflict increases tremendously (Goodstein, Gautan, & Boeker, 1994). This trend has been attributed to board members' lack of satisfaction and motivation since larger boards prohibit individuals from feeling that they are making a significant change and limit participation (Shaw, 1981). Although this suggests that large boards are ineffective, this generalization is only limited to decision-making and assumes that all boards have the same function. As Pfeffer (1973) demonstrated, the intent of larger boards tend to focus on resource acquisition and is positively correlated with larger budgets, higher proportion of private donation, and influence in the community. Thus, larger boards may be ineffective at strategic decision-making, but they were created to mainly acquire funds, not make decisions for the institution. However, this contradiction in focus of Boards is important in light of the court cases mentioned previously. Regardless of the focus of the board, its members are legally responsible for the care, whether individuals are effectively selected for their fundraising ability or capability to run a healthcare institution.

Just as the Board, as an entity, can assume various roles, the same trend stands for individuals comprising the board. The role of outsiders on a board is often static. They are selected for their ability to independently make decisions without interference from their interactions in the organization (Bhagat & Black, 2002). Outside of the healthcare sector, corporations are moving towards a higher percentage of independent board members as a way to create a separation between control, ownership, and shareholders (Roche, 2009). According to Molinari et al. (1993), outsiders are subject to the knowledge provided by their inside member counterparts and must oversee and integrate knowledge to make sound decisions. Thus, insiders

are the source knowledge about the organization, very much important in the healthcare field, and include both Administrators to provide adequate information about the management aspect of the organization and physicians to provide knowledge about the medical side of the hospital. Insiders, such as physicians, are especially apt to utilize their board membership differently based on their inside knowledge, experience, and expectations. Unlike outside, independent board members, insiders are subject to their role both as a board member as well as an employee of the organization. Thus, their decisions will undoubtedly be affected by both roles and has the potential to be influenced by either increased commitment to the organization as a whole or by personal ventures and requests.

Physicians as Hospital Board Members

Economists and Business Analysts suggest that the role of insiders, physicians in this case, can be classified two ways, either under a Managerial or Agency theoretical approach (Molinari et al., 1993; Baysinger and Hoskisson, 1990; Zahra and Pierce, 1989). The economic theories can easily be adapted to reflect the possible motives of insider-physicians when voting and carrying out the role and capacity of a member of the Board of Directors.

According to the Managerial theory, insiders benefit the Board because they have the capacity to provide necessary knowledge and information that can only be seen from within the organization. These insiders serve to educate and inform other board members on the impacts of Board decisions. Outsiders are only “part-time” participators in the organization and are removed from access to necessary information to make sound decisions (Molinari, Morlock, Alexander, & Lyles, 1993). These organizational-insiders have a dual role that allows them to both see issues on a day-to-day basis (acting in their capacity as a physician) and to also enact organizational

changes (in their capacity as a Board Member). Baysinger and Hoskisson (1990) suggest that the benefits of insider knowledge and daily experiences result in a higher effectiveness of the governing Board. Under the lens of Managerial theory, the effectiveness of the Board of Directors should positively correlate with the involvement of inside physicians on the Board. However, an opposite trend would be expected by supporters of Agency theory.

In contrast with the Managerial theory, Agency theory suggests that inside participants on the Board of Directors impair effective decision-making based on their personal self-interests (Molinari et al., 1993). This theory portrays insiders as opportunistic members who seek to capitalize on their dual role to acquire benefits for themselves or their department and fail to make decisions based on the greater good of the institution (Baysinger & Hoskisson, 1990). For example, physicians, acting as insiders on the board, have the potential to affect the purchase of new surgical equipment for a hospital. Given that the budget of the hospital places a cap on the amount to be spent for equipment, an insider might attempt to ensure that funds are spent in his area of practice and neglect other departments. Such inequities arise due to a conflict in the preferences of the agent (the insider) and the organization (Eisenhardt, 1989). As a result of potential conflicts, agency theory tends to suggest that organizations should emphasize the importance of the separation of ownership from control (Flingstein & Freeland, 1995).

The existence and contrary nature of Managerial and Agency theory has led to the previous study of physician involvement on Hospital Boards of Directors over the past several decades. Although the research in this field is limited, there are numerous studies available for examination that have laid the groundwork for the current study.

Previous studies have evaluated the effectiveness of hospital-governing Boards of Directors and the effects of physician membership on said boards. Generally, these studies have

presented results that suggest a positive effect of having physicians as board members in areas of hospital governance and financial performance.

Molinari et al. (1993) presents managerial and agency theory as two alternative theories regarding physician membership on Hospital Boards. The researchers examined hospital financial records and governing board data for a single year of acute care hospitals in California. They found that there were significant relationships between insider participation on the Board and the hospital's financial viability. Their results indicate that insider participation increases profitability and liquidity ratios, used as measures of hospital financial performance. This relationship was strengthened especially in the short run. Molinari et al. (1993) use their results as support for the managerial hypothesis and report that the informational advantage provided by insiders increases the financial performance of the organization.

In a follow-up, longitudinal study, Molinari et al. (1995) reported similar results over a period of four years (1985-1988). Boards with inside physician membership performed better financially than those without medical staff participation. They found limited impact in facility type (for profit vs. not for profit, chain vs. independent, etc) when evaluating operating margins. This study used categorical variables (either insider participation or no insider participation) and did not evaluate effectiveness based on the number or percentage of insiders. The researches contend that there is no empirical evidence to support agency theory when examining physician involvement.

Goldstein and Ward (2004) evaluated the impact of physician involvement in strategic decision-making. Although this study extends beyond membership on the board (a 7-point Likert scale measuring subjective physician involvement was utilized), its results translate well to the current study. The results of Goldstein and Ward's study indicate that physician involvement was

positively correlated with performance, when measured in terms of occupancy rate and market share.

Weiner, Shortell, & Alexander (1997) examined the benefits of including physicians in programs and decisions that affect them. They investigated the effects of involving physician leadership in quality improvement programs created by the hospital. Weiner and colleagues suggested that when physicians are not included on such program creation, they are reluctant to participate due to distrust of the hospital governance and fear of a loss of physician autonomy. They reported that involving physicians in the creation of these programs increased quality improvement program participation, thus suggesting that involving physicians administratively could yield better quality of care for patients.

Shortell and LoGerfo examined the effects of physician leadership in their (1981) study on quality of care measures for myocardial infarctions and appendectomy. They found that both the involvement of physicians in strategic decisions and having the Chief of Medical Staff on the governing board were positively correlated with better quality of care measures, regardless of organizational characteristics. The degree on involvement in strategic decision making accounted for 5-7% of the variation among mortality rates for acute myocardial infarctions.

The preceding studies have established that physician leadership, more specifically physician membership on the governing Board of Directors, increases the hospital's financial performance as well as various measures of quality patient care. However, there is still a gap in the research that allows for the integration of various other measures of patient care and perception of care, most notably process of care data collected by the U.S. Department of Health and Human Services as well as the newly initiated Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey.

Measuring Hospital Quality of Care and Patient Satisfaction

Patient care can be examined in various ways including direct measures of care as well as measures of patients' perception of care. For the purpose of this study, direct quality of care will be measured by process of care data on surgical improvement data from the US Department of Health and Human Services. This will provide an objective measure of the quality of care provided by the institutions. The subjective measures of patient perception will be measured through the HCAHPS survey responses.

The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey is the product of several private organizations and United States government agencies including the Hospital Quality Alliance (HQA), Agency for Healthcare Research and Quality (AHRQ), Centers for Medicare and Medicaid Service (CMS), and the Joint Commission (Jha, Orav, Zheng, & Epstein, 2008). The survey consists of 27 items used to address various aspects of the patient's experience and two global ratings: overall rating of the hospital and the patient's willingness to recommend the hospital (Giorgano, Elliott, Goldstein, Lehrman, & Spencer, 2010).

The survey measures and publicly reports the patient perspective of care through a core set of standardized questions nationwide (Goldstein, Farquhar, Crofton, Darby, & Garfinkel, 2005). Prior to the creation of the HCAHPS survey, patient perception was limited in scope and no standardized measures existed. Data was limited to objective quality of care measures and did not measure customer satisfaction. Through a series of focus groups, Sofaer, Crofton, Goldstein, Hoy, and Crabb (2005) confirmed that the majority of the areas that the HCAHPS survey measures were significant enough to sway the individuals to change hospital selection. The overlap reported by these researchers suggests that the HCAHPS survey is a sufficient

measurement of patient perception and customer satisfaction. Strengthening its quality as a measure of patient care, Jha and colleagues (2005) report a strong, positive correlation between HCAHPS ratings and quality of care measures, including the ratio of nurses to patient-days and process of care data for acute myocardial infarctions and pneumonia.

The impact of HCAHPS data has yet to be seen. The first publicly reported data was published online in March 2008 and has since been updated quarterly. With the ability for patients, healthcare providers, and hospital administrators to access these public results, hospitals seek to maximize results to attract patients. Recent research has demonstrated that the public reporting data stimulates healthcare organizations to improve their quality improvement activity across the institution (Fung, Lim, Mattke, Damberg, & Shelkelle, 2008).

Present Study

This study addressed hospitals in Tennessee. According to the American Hospital Association (2008), of approximately 4,897 hospitals in the United States, 133 are in Tennessee. Of these, 77 are located in metropolitan areas. Tennessee hospitals provide approximately 20,000 patient beds (American Hospital Directory, 2010). In 2007, they admitted 969,763 patients with an average stay of 5.5 days (American Hospital Association, 2008).

With the recent release of the HCAHPS public reporting, it is vital to evaluate the quality and relevance of the information reported. Combining the recent release of the information and the contention that it stands as an acceptable measure of quality patient care and customer satisfaction, hospitals are seeking ways to maximize their performance on the survey. As established by previous research, the inclusion of physicians in decision-making processes (specifically as voting members of the board of directors) shows positive correlation with various

measures of financial performance and patient care. The release of HCAHPS as the potential benchmark of patient perception of care has created a gap in the research. Therefore, this study seeks to fill that gap by analyzing the potential relationship between physician board membership and HCAHPS as well as process of care data collected by the same agencies. Based on prior research, the present study addressed the following hypothesis for Tennessee hospitals:

H1: The number of inside physician membership on hospitals' governing Boards of Directors correlates positively with hospitals':

- a. Averaged process of care ratings.
- b. Averaged rating of six composite measures on the HCAPHS survey.
- c. Percentage of patients who rate the hospital as "Excellent"
- d. Percentage of patients who recommend the hospital.

Empirical support for this hypothesis for indicators of hospital performance and/or customer satisfaction, would support the managerial hypothesis, which links insider board membership with hospital effectiveness via physicians' participation in strategic planning and decision-making (Goldstein and Ward, 2004; Molinari et al., 1993). The hypothesis suggests that physicians contribute expert medical knowledge and insight to the Board from direct patient contact and daily experience on the unit floors to inform board members prior to decisions. Support for the managerial hypothesis would also reinforce inclusion of physicians as members of boards of directors as part of their initiatives to improve patient care and other aspects of hospital effectiveness.

This study raises additional questions concerning the board of directors such as, does the number of physicians directly or indirectly influence financial success? This study particularly addresses quality and perception of care, but these variables seem likely candidates to influence the financial success so it seems plausible to examine the extent to which the number of physicians might start a chain reaction towards improving financial success. Additionally, it raises the

question as to whether it is the percentage or raw number of physicians that impacts the board's performance. Finally, the study seeks to examine other variables that may play a role in the quality and perception of care.

METHODS

This field study examines physician membership on Tennessee hospital Boards of Directors and measures of hospital performance and customer satisfaction, using information gathered from governmental and private agencies including the U.S. Department of Health and Human Studies and the American Hospital Directory. Board of Director demographic information were obtained directly from the institutions via phone interviews.

Board of Directors and Hospital demographics

Through publicly available data via websites and appeals to Hospital administrators, board demographics were obtained in reference to the number members of the board of directors, the number of inside physicians serving on the Board of Directors, and the percentage of the total board population that they represent. Each hospital interviewed was asked two major questions of interest:

1. How many voting members compose the Board of Directors?
2. How many of those members are practicing physicians at the hospital?

For the purpose of this study, a “Physician” is defined as an individual with either a Doctor of Medicine (M.D.) or Doctor of Osteopathic Medicine (D.O.) degree that either works full-time in the hospital or has clinical hospital privileges and practices on a regular basis at the institution. Such a definition was selected because the purpose of this study is to review the effects of *insider* physician participation on boards based on their informational advantage given to them by working within the institution, not merely because of their expert medical knowledge. Small acute care specialty institutions as well as mental and physical rehabilitation facilities were not included in this study because their result would not be representative across the remaining

hospital population. Out of the population of 133 Tennessee Hospitals, 103 met the qualifications for inclusion in this study. The remaining 30 were excluded based on being classified as an acute care or specialty hospital or due to non-report of HCAHPS data.

Additionally, hospital demographics including number of beds, annual patient volume, and gross patient revenue were obtained from the American Hospital Directory. Hospitals were assigned location codes based on their county of residence population according to the United States Department of Agriculture Urban-Rural continuum codes ranging from a code of 1 (a county in a metro area with a population of greater than 1 million) to a code of 9 (a county in a non-metro area that is completely rural or less than 2,500 urban population, that is not adjacent to a metro area).

Process of Care Measures (PCM)

Using publicly available data from the U.S. Department of Health and Human Services and associated agencies (via <http://www.hospitalcompare.hhs.gov>), process of care measures were obtained for each participating hospital. Process of Care Measurements (PCMs) were recorded for Surgical care improvement project. This category was selected because its measurement spanned across several units of the hospital, included the broadest category of patients, and was not illness specific (such as Pneumonia PCMs or Acute myocardial infarction PCMs which are reported by the same source). The PCM subcategories reported were averaged to obtain a mean percentage of correct processes of care. In the event that a hospital did not have enough cases to be included in a particular subcategory, the category was averaged with the remaining subcategories only. The data is reported as a percentage of how often the correct process of care measures are performed

Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS)

HCAHPS data is reported as the percentage of patients who give an “always” rating on several aspects of their hospital experience. For example, the percentage of patient report the physician “always” treated the patient with courtesy and respect or explained procedures in a manner in which the patient could understand. These percentages will be averaged to obtain a mean value for the specific hospital quality topics across the 6 subcategories (communication with nurses, communication with doctors, responsiveness of hospital staff, pain management, communication about medicine, and discharge information). In addition to the 6 subcategories, the two global measures satisfaction are of particular importance. The percentage of patients who give their overall hospital experience a rating of 9 or 10 (on a 10 point scale) will be reported as well as the percentage of patients who report that they would highly recommend the hospital were studied independently from the 6 subcategories. These measures are of particular interest because they reflect the overall perception of the hospital and their tendency to recommend the hospital, thus directly affecting the future hospital patient volume.

Results

Of the 133 hospitals in Tennessee, 103 met the criteria for inclusion in the study. Of these, 90 were included in the study. The remaining 13 were excluded either based on the hospital declining to be included in the study or unavailable HCAHPS and/or process of care measures (PCM) data. The 90 hospitals, representing 71 of Tennessee's 95 counties (75%), include nearly all institutions with publicly reported data. The hospitals ranged from 32 to over 1000 beds with an average of 206 beds at each facility.

Table 1. Descriptive Statistics

	Mean	St. Dev.	1	2	3	4	5	6	7	8	9	10
1. Location Type (1-9 Code)	3.73	2.30	-									
2. Total BOD size	12.17	6.02	-.12	-								
3. # Drs on BOD	3.12	2.74	-.16	.34*	-							
4. % Drs on BOD	26.23	19.9	-.05	-.06	.84*	-						
5. Gross Pat. Rev (\$)	4.0* 10 ⁸	5.9* 10 ⁸	-.43*	.32*	.10	-.09	-					
6. Occupancy Rate (%)	53.87	17.1	-.33*	.21*	.16	.09	.58*	-				
7. HCAHPS Avg (%)	69.87	4.7	.51	.07	-.09	-.14	-.21*	-.20	-			
8. % Excellent Rating	65.39	7.40	-.21*	.08	.08	.01	.13	.18	.75*	-		
9. % Recommend to others	67.88	8.97	-.33*	.19	.21*	.08	.25*	.27*	.63*	.93*	-	
10. Surgical PCM Compliance (%)	89.07	7.95	-.42*	.04	.04	.04	.28*	.26*	-.24*	.07	.19	-

* $p < .05$

Analysis

The data collected was analyzed using correlational statistics with the results presented in Table 1 as a correlation matrix. The location type (coded from 1-9 based on county population) was most correlated with other variables including: Gross Patient Revenue, Occupancy Rate, percent of patients giving the hospital an excellence rating, percentage of patients who would recommend the hospital, and correct process of care measures. There was not a correlation with the major variable of interest, the number of physicians on the Board.

However, the major purpose of this study is to compare the correlations of the number of physicians with the following four variables: process of care measures, average composite HCAHPS responses, percentage of patients who rated the hospital as “excellent”, and the number of patients who would recommend the hospital.

For the first three sub-sections of the hypothesis (hypothesis 1-A,B,C), no significant correlation emerged. As a result, it is concluded that physician membership on the Board of Directors does not effect the quality of care as measured by surgical process of care measures nor does it effect HCAHPS responses when examining averaged composite scores and the global “excellent” rating.

Data did support the prediction about patients' recommending their hospitals. Results showed a significant, positive correlation of .21 ($p < .05$) between the percentage of patients who recommend the hospital and the number of physicians on the Board of Directors. The strength of this correlation is consistent with previous research (Molinari et al., 1995). As the number of physicians increases on the board of directors, more patients, on average, recommended the hospital to others. Although a significant correlation did appear when examining the number of physicians, the same was not true when examining the percentage which the physicians

composed on the board. Percent composition was not correlated with any measures of quality or perception of care.

Discussion

The results of this study provide empirical support for the hypothesis that physician involvement in strategic decision-making as members of the governing board directors correlates with customer satisfaction as measured by the percentage of patient-respondents who would recommend the hospital on the HCAHPS survey. These findings encourage hospitals to include more physicians on the Board of Directors as a way to increase the patient perception of care. As HCAHPS data becomes more widely accepted, patients will be more likely to make their hospital selection based on the available data. Thus, hospitals must maximize their performance on the measured scales. The current research suggests that increasing physician involvement on the board of directors might prove to be a viable option to maximize the hospital's performance on HCAHPS measures by increasing customer/patient satisfaction. Until recently, hospitals failed to recognize the importance of patient satisfaction. Prior to the creation of HCAHPS, hospitals primarily relied on objective measures of patient care and limited concern was given to subjective measures of customer satisfaction. However, patients tend to have options when selecting a healthcare institution and the patient's perception of his hospital experience likely causes patients to select a given hospital in the future or recommend it to others. As a result, perception of current care will influence future patient volume and thus must be maximized to ensure the future of the institution.

Contribution to current knowledge

As established by previous research (Goldstein and Ward, 2004; Molinari et al., 1993; Molinari et al., 1995; Shortell and LoGerfo, 1981), hospital Boards of Directors have the potential to influence various aspects of hospital performance ranging from the financial stability

of the system to aspects of patient care. However, there is a gap in the research when examining customer satisfaction. The HCAHPS survey provides a standardized measure of patient perception of care and its release opened the door to examine the area of hospital customer satisfaction (Goldstein et al., 2005). This study is consistent with the previous research establishing a positive correlation between physician board membership and various measures of hospital performance. The current study stands as a significant advance in the field as evidence that the hospital Board of Directors can affect the environment of the hospital to increase the patient's perception of care.

As part of this study, data on occupancy rate and gross patient revenue were collected and analyzed. Molinari et al. (1993,1995) as well as Goldstein and Ward (2004) suggested that a positive relation should emerge between these variables and physician participation. However, the current study did not establish significant relationship between these variables. Weak, positive correlations surfaced however they were not to a satisfactory significance level. It is believed that extraneous variables (such as hospital type, size, etc) prevented the correlation at a significance level of $p > .05$ and that once these are eliminated, a significant correlation may appear. This is encouraged in future research.

Implications for Theory

As discussed earlier, the two dominating theories of Insider involvement are agency theory and managerial theory. In an agency theoretical approach, insiders (physicians, in this case) are significantly influenced by their personal self-interests and make decisions based on these factors rather than making decisions to benefit the organization at large (Baysinger & Hoskisson, 1990; Eisenhardt, 1989; Flingstein & Freeland, 1995; Zahra & Pierce, 1989).

Managerial theory contends that insiders are privy to information that would only be accessible by those within the organization. This informational advantage serves to improve the collective knowledge of the Board. The Board is then more capable of making decisions that would best benefit the organization. With a positive correlation between physician membership on the board and the measure of customer service, the managerial approach is supported. It is inferred that the physician board members provide a level of information that could only be gained from working on the hospital units. These physicians are capable of seeing the shortcomings of the hospital and institute programs to raise the quality of the healthcare. Physician leaders fill a capacity where they are capable of instituting effective quality improvement efforts and by including them in the decision-making process, change is possible (Weiner, et al., 1997). The current study's support for managerial theory maintains the trend throughout the previous research which credits physician inside involvement for increased hospital quality on measures of financial performance and patient care (Goldstein and Ward, 2004; Molinari et al., 1993; Molinari et al., 1995; Shortell and LoGerfo, 1981).

Implications for practice

With the theoretical understanding, operating under the managerial perspective, that increasing physician participation on the board of directors is positively correlated with patient perception of care, it is in the best interest of the hospital to capitalize on this trend and to include physicians in strategic decision-making. As the results demonstrate, it is the raw number of physicians, not the percentage, which has the potential to increase performance. As a result, it would be beneficial to add additional seats to the board to include physicians rather than replacing existing seats with physicians. According to managerial theory, the vital aspect of

including insiders is to provide an informational advantage to educate the board. The theory makes no direct mention about the importance of the insider's vote. Thus, additional research should be conducted to examine the impact non-voting vs. voting membership capacity. Pending results of such a study, it could be asserted that the creation of medical advisory boards for the governing board could provide the informational advantage without occupying seats on the Board of Directors. This would resolve the issue that some boards might encounter when the corporation by-laws specify requirements (ie. territorial representation) for its members.

This study particularly examines the role that physician membership on the Board of Directors performs. However, hospital executives must examine physician membership as only one aspect of board composition. The present study found a significant, positive correlation with physician board membership that is consistent with previous research. However, additional research also establishes that numerous variables play a role in determining board success and hospital performance (Alexander et al., 2001; Goodstein et al., 1994). This is not mentioned to diminish the impact of this study. Instead, it is stated to emphasize the importance that Board composition, including physician membership, makes on the Board's capabilities. Hospital Executives must then consider each of these variables when selecting members of the governing board to ensure future success.

The result of a positive correlation between physician board membership and the number of patients that would recommend the hospital implies that these two variables are related. Although correlation does not infer causation, managerial theory could be applied to suggest that physician membership on the board serves to educate outside board members on the needs and shortcomings of the hospital to improve patient care, thus yielding higher patient satisfaction. Physicians interact directly with the patient experience, not outside board members, thus they

would be qualified to offer insight to improve the patient experience, perception of care, and customer satisfaction. However, such a link would need to be further studied in a controlled, longitudinal experiment to infer causation. Previous research has followed the trend to first establish the correlational relationship between physician membership and measure of hospital performance followed by a longitudinal study to suggest causation (Molinari et al., 1993; Molinari et al., 1995).

This study is particularly important for practice because the HCAHPS survey has been empirically demonstrated to address the areas that consumers find the most important when evaluating their hospital experience (Sofaer et al., 2005). Thus, administrators must be extremely vigilant to maximize their score on these measures to accurately address the needs of their consumers. The global measures, including whether the patient would recommend the hospital to others, are of extra importance because high scores on these measures are likely to influence future patient choice of that institution when competing options exist for the patient. Just like any other industry, hospitals must compete for customers and the patient's perspective of the care received is the "bottom line" when patients select their healthcare institutions (Jha et al, 2008).

Although specifically focusing on HCAHPS data, this study (combined with the previous research of Goldstein and Ward, 2004; Molinari et al., 1993; Molinari et al., 1995; Shortell and LoGerfo, 1981) provides support for the importance of an effective hospital Board of Directors. As the hospital industry changes and patients desire more autonomy in selecting their healthcare providers, the duty of maximizing care ultimately falls to the governing Board. These Boards must be proactive in the implementation of actions that have the capacity to increase the quality of the service and customer satisfaction for that service. This and the previous research offer the

opportunity for hospitals to improve the quality and perception of care through the implementation of a single directive: the involvement of physicians on the board of directors.

Limitations

This study collected data solely from Tennessee Hospitals in the 4th quarter of 2009. However, because data was collected from all compliant institutions, there is no evidence that selection biased the results as a result of geography. This study examines an almost-complete population of the hospitals in Tennessee. Therefore it is considered to be an accurate representation of Tennessee Hospitals. Hospitals that chose not to participate were self-selected, so no research bias is present in institution selection. Additionally, this study was conducted in a cross-sectional manner and the results imply correlation rather than causation. A longitudinal study is recommended to ascertain the long and short-term effects of increasing physician membership on the correlated dependent variables.

Future Research

Little research has been completed in the aspects of hospital customer satisfaction or the role that physicians fulfill on hospital Boards of Directors. This study provides preliminary empirical results in an area of patient care that has not been previously explored. As such, it opens many doors to build upon the results and explore the depths of this topic. It is of particular research interest that negative measures of patient care, most especially medical error rates, be examined to determine its correlation with physician membership on the Board.

This study examined all hospitals in Tennessee, regardless of profit or non-profit status, independent operation or ownership by a chain, or public or private ownership. It is suggested that future research be conducted to evaluate the effects of physician membership within each of these subgroups. It is believed that these variables have the potential to create significant variability and that once this variability is removed, the strength of the correlation will increase.

Previous research has established that the release of patient care data overtime will increase the quality of care (Fung et al., 2008). Based on this trend, the next logical step in this area of research is to utilize a longitudinal study to evaluate the cause-and-effect relationship of these variables. Due to the recency of the release of the HCAHPS data in 2008, the possibility of a longitudinal study has been prevented. However, as the HCAHPS is released on a quarterly basis for several years, longitudinal studies will be necessary for the continued support of this relationship. At current, the relationship has the possibility of reflecting a cause and effect relationship or the ability to use physician board membership as an indicator of the hospital's commitment to patient perception of care. A longitudinal study is necessary to evaluate these possibilities. It is expected that, over time, physician board members will be best suited to implement change that requires their specialized knowledge as an insider as well and their leadership on the Board of Directors.

The additional variables with significant correlations to patient recommendation are also important. Specifically, there are significant correlations with gross patient revenue and occupancy rate, both measures of financial performance. Although this study cannot assert causal relationships, longitudinal data is encouraged in future research to ascertain the correlations and causal relationship between these variables to investigate the effect which the percent recommend holds over these variables. Since a positive recommendation would be likely to

increase future patient volume, this would reinforce the necessity to increase physician membership.

It is further suggested that comparative research be conducted to examine the effectiveness of boards that identify their role as either resource acquisition or administrative, as these are the two major roles which board members assume (Pfeffer, 1973). Because of the disadvantages of common role ambiguity discussed by Wright and Millesen (2008), it is expected that boards with the lowest reports of role ambiguity will be the most effective. It is further hypothesized that HCAHPS measures will be highest on boards that self-identify as administrative and have higher numbers of physician members. This would utilize the research in this study identifying the role of physicians on the board and combine it with the belief that the most effective boards are those with administrative capacity.

Conclusion

Despite the preliminary nature of this work, this study offers significant insight into the role that hospital boards of directors fulfill and the extent to which this role can be adapted to maximize measures of performance. Hospitals are encouraged to proactively engage physicians in decision-making processes, especially membership on the Boards of Directors. This and all previously published research in this area indicate that physicians play an integral role in a successful board of directors and although the correlation is typically weak, it is significant and the accumulation of this data suggests the reliability of these correlations. Hospital administrators must advocate for the integration of medicine and corporate oversight into a single entity. The healthcare industry is unique in that the primary decision makers are often removed from the inside, expert knowledge that is the basis of the industry. Steps must be taken

to ensure that the gap between these two roles is eliminated to increase overall effectiveness. The findings of this study usher in the possibility to unlock the potential of the Board of Directors as a governing body with the ability to improve the experience of the patients it serves.

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